Recent Developments in Maintenance Prescribing and Monitoring in the United Kingdom

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Abstract. *After a brief historical review of British drug legislation and public and governmental attitudes, this paper describes the wide range of policies and practices that have appeared since the explosion of illicit drug abuse in the 1960s. The spectrum goes from a reluctance to prescribe at all to maintenance on injectable opiates. Comparisons are made with differing attitudes to the availability of abortion in public health services. Compared with 5 years ago, about three times more methadone is being prescribed. There is a steady increase in prescriptions for injectable methadone but heroin maintenance is still rare. The "British System" permits great flexibility in the choice of opiates for maintenance. Some amphetamine-prescribing programmes also exist. Hair analysis for drugs to monitor levels of both prescribed and unprescribed drugs is a welcome and promising alternative to undignified and often misleading urine tests.*

In their efforts to manage the problem of illicit drug use, several countries are contemplating or even doing things that only a few years ago would have been unthinkable or at least politically unacceptable. In some ways, what is happening in Britain is less revolutionary than what is happening in some cities in Switzerland and what is proposed in the capital of Australia, namely on-site dispensing and injecting of heroin. Yet in other respects, prescribing for addicts in Britain has been extremely revolutionary for many years. Indeed, such a long-established state of affairs can hardly, by definition, be called revolutionary at all. Paradoxically, it could equally be described as traditional or even reactionary. To understand British maintenance prescribing, a brief historical review is necessary.

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Until the First World War, in Britain as in most other countries, official attitudes to drug abuse or dependence, including alcoholism, were *laissez faire.* If people wished to amuse, console, or destroy themselves with drugs, this was regrettable but not regarded as something that required much in the way of legislation. In the case of alcohol—still by far our most destructive drug—this is still the official attitude. Opium could be bought at any grocer's shop in Britain until the Pharmacy Act of 1868; thereafter it could be bought in any pharmacy without a prescription. Opium was very widely used and when Karl Marx famously described religion as "the opium of the people," the people knew exactly what he meant. The abuse of cocaine caused some problems at the turn of the century but, rather than being prohibited, it was merely restricted to medical prescription, thus putting it in much the same position as the benzodiazepine tranquillisers today.

When the United States persuaded a largely reluctant world to adopt the prohibition of most drugs other than alcohol and nicotine, the law-abiding British appeared largely to abandon their reliance upon opium, although it was still available in over-the-counter preparations containing small concentrations of opium, and indeed still is. However, there remained in Britain a small but hard core of addicts—mainly to opiates—whose needs could not be met in this way and who needed relatively large quantities. Furthermore, many of them were also addicted to injecting. Some, no doubt, were therapeutic addicts who acquired their habit following war injuries. It has been said that many of those who injected used the subcutaneous or intramuscular route rather than the intravenous one,[1] but the evidence for this is not clear.

At all events, that typically British response to thorny problems, a Royal Commission, was set up under the chairmanship of Sir Humphrey Rolleston, President of the Royal College of Physicians. The Commission decided that if such people really needed heroin (or indeed cocaine) because they could not function satisfactorily without it and if efforts to persuade them to abstain had repeatedly failed, then they could be maintained by their ordinary doctors indefinitely and without any attempt to force them to

become drug-free. Medical freedom was not complete, however, and their prescribing habits could be challenged if thought excessive.[2] It was certainly not a rigid system and indeed, Bewley[3] noted that "there was no system but as there was very little in the way of misuse of drugs, this did not matter." These addicts seemed to have been a fairly middle-class group and the habit did not spread to the proletariat. Indeed, if you had offered heroin or even cannabis to the average proletarian youth in the 1950s, it would have been rejected with suspicion or amazement. I call this the "avocado principle" of drug abuse, because in the 1950s the attitude of the proletariat to avocados would have been equally suspicious, whereas now, both avocados and heroin are to be found on every street.

The sudden explosion of unorthodox drug use in the mid-1960s, particularly in working-class youth, led to the setting up of prescribing clinics where this traditional policy was continued on a much larger scale and at public rather than private expense. (Until the National Health Service (NHS) was established in 1948, most maintained patients would have paid for their drugs.) In addition to oral methadone, injectable methadone and heroin, cocaine, and injectable methylamphetamine were also prescribed.[4] The clinics flourished in the second half of the 1960s and early 1970s, although methylamphetamine caused a disproportionate number of psychiatric problems (mainly toxic psychoses) and was restricted to hospital use in 1969.

Though their philosophy sometimes sounded like "Tell us what you would like and bring a small wheelbarrow to take it away," the clinics were successful in that they kept many addicts relatively free from drug-related crime, though a proportion of the drugs prescribed naturally leaked out into the black or grey market. However, compared with the number of heroin users who never went anywhere near a clinic, the number of patients in receipt of prescriptions was relatively small and their contribution to the total illicit drug market could not have been a very large one overall. Nevertheless, this fact, together with an increasing degree of battle fatigue in the clinic staff, led to a gradual disenchantment

with maintenance prescribing in general and injectable prescribing in particular. By the end of the 1970s, and without any direction from the government, many of the prescribing clinics had stopped injectable prescribing and some were prescribing nothing more than advice to stop using drugs. Caplehorn[5] attributes this, at least in part, to "the dominance of a few individuals and their commitment to psychological, usually behavioural models of drug dependence." This, he feels, influenced staff of the drug-dependence units to refuse to provide maintenance treatment. The gradual return of maintenance prescriptions over the last decade owes nothing to government policy and very little to awareness of the literature, since the first controlled trial showing the specific effectiveness of methadone maintenance was published in 1979.[6] Rather, it was the AIDS epidemic and a growing disenchantment with the poor results of drug-free treatments.

Why Intravenous Maintenance?

Although it has never really been spelt out, I suspect that the inclusion of intravenous preparations in British maintenance prescribing was a simple, pragmatic response to the fact that with opiates, as with nicotine, the route and mode of the administration are as important for many regular users as the effects of the drug itself. Anyone who doubts the chaos that would occur if we banned cigarettes but made nicotine freely available in patches or chewing gum, has only to look at what happened in Italy at the end of 1991 when, for a short period, a national tobacco strike seriously interrupted supplies. Reports of tobacco-related crimes started to appear. The relatively modest specific effects of oral or transdermal nicotine substitution treatment also demonstrate that even in people with generally fulfilling lives, addiction is not just a pharmacological phenomenon.

When patients in oral methadone programs continue to inject heroin, it may be that they are getting an inadequate dose of methadone; a difficulty in refraining from injection is also a com-

mon explanation. Apart from some very small injection programmes in Australia and Amsterdam during the 1980s, Britain seems to have been about the only country where prescribing policies reflect this fact. However, the reality in most areas of Britain in the 1980s was that maintenance, even with oral methadone, as not generally available. When methadone was prescribed, it generally was given in short, diminishing courses, likened by Deglon to "throwing a punctured life-belt to a drowning man."[7] The prescribing of injectables was even more restricted, being generally available in no more than two or three NHS centres. Several NHS clinics continued to maintain one or two favoured patients on injectables but were usually rather embarrassed to admit it.

The Abortion Analogy

Although Britain's abortion law was liberalised in 1967, the availability of abortion in the NHS still varies considerably across the country. In some parts, more than 90% of all abortions are performed in NHS hospitals; in other parts, the percentages are almost reversed, as Table I shows.

TABLE I
NHS ABORTIONS IN BRITAIN (% OF TOTAL)

District	1975	1981	1991
Newcastle upon Tyne	95	94	91
Preston	16	10	9
East Berkshire	19	15	5
North Devon	91	88	96
Tunbridge Wells	32	39	21

I suggest that such persistent differences reflect persistently differing moral attitudes among senior, influential gynaecologists and administrators, and something very similar seems to have happened with methadone. For example, until the late 1980s, despite the fact that Edinburgh was the AIDS capital of Europe, Scotland was almost a methadone-free zone.

Recent Changes

The main changes that have become apparent since 1990 are: (1) greater acceptance of oral methadone maintenance; (2) greater readiness to consider intravenous prescribing; and (3) a less marked increase in willingness to prescribe non-opiate drugs for maintenance, notably benzodiazepines and amphetamines.

Oral Methadone

Surprisingly, there are no government figures about the amount of methadone prescribed. However, information from the International Narcotics Bureau indicates a threefold increase in British methadone consumption since 1990. This is supported by figures from the pharmaceutical industry as well as by anecdotal accounts. Indefinite maintenance is still the exception in most areas, however, although the battle against it is gradually being lost and the definition of "a reducing dose" has become increasingly flexible.

The revised Home Office addict notification forms, in use since 1990, have enabled some information on methadone prescribing patterns to be collected but none of it has been published. Some very selective data kindly made available by one regional database (North West Thames) indicate that reducing doses of methadone are being prescribed somewhat less frequently in that region. In 1990, the prescribing plan was described as "reducing" in 72% of notifications and in 1993, the proportion was 57%. However, during that period, there was little change in the proportion of prescribing—fluctuating between 31% and 41%—that was expected to last for less than 6 months (A. Sondhi, personal communication) and no information is available about the doses prescribed. Many clinics seem to operate an 80-mg ceiling for oral methadone.

Methadone is usually prescribed as a 1-mg/ml mixture, but stronger mixtures can be made to order. Tablets of 5 mg are also available and are particularly useful for holidays and for patients whose work involves much travel.

Intravenous Prescribing

Even less information is available on this point. There are not even any international figures. However, an executive of one of the main producers of injectable methadone reports "a growing trend in injectables." Until 1989, the only injectable methadone available in Britain was in the form of 10-mg ampoules, which were relatively expensive. At the urging of the Stapleford Centre, a company produced single, much cheaper ampoules containing 35 mg or 50 mg. In the late 1980s, however, before the larger sizes were available, the company making the 10-mg ampoules sold approximately 2 million ampoules a year. Very few would have been used for conventional analgesia, for which injectable methadone is not widely prescribed.

Unfortunately, until October 1993, these larger ampoules were made to special order and did not appear in the pharmaceutical industry's figures. However, it seems that at least 30 kg of methadone a year is prescribed in injectable form. At an average daily dose of 75 mg, this means about 1,100 patients; since some would receive smaller doses for short periods, however, the true figure could be higher. Even in Scotland, some intravenous methadone prescribing now occurs.

Heroin prescribing is even less common than methadone. It is virtually nonexistent in the private sector, since to prescribe heroin requires a special license that in practice, is not given for private prescribing. There currently are only about 320 patients receiving heroin prescriptions in the UK (John Marks, personal communication).

The main heroin-prescribing centre in Britain, at the clinic on Merseyside run by Dr. John Marks, with about 100 patients (and 50 on injectable methadone), has just lost its local NHS contract to another NHS provider offering largely methadone reduction and an abstinence-based ideology. Such a programme is, of course, much cheaper for the purchasing health authority than an injectable programme, and heroin is considerably more expensive than methadone because it requires several doses per day. Whereas 100 mg of injectable methadone would retail at about £5 ($8) a day,

100 mg of heroin in ampoules four times daily costs about £20 a day. It will save the community much more than that in theft, but that is not how budget-holders think. (Diamorphine powder is less costly but obviously lends itself to adulteration and other risks.)

Under the present NHS financial arrangements, Dr. Marks will continue to prescribe heroin and IV methadone for a small number of patients referred and paid for by distant health authorities whose local services will not prescribe injectables.

Alternatives to Methadone and Heroin

Another feature of the British system is that if doctors are willing to prescribe opiate maintenance, there are few restrictions on what and how much they may prescribe. A special license is needed for heroin, cocaine, or Diconal (a mixture of dipipanone and cyclizine, which is popular with addicts, moderately hallucinogenic and particularly dangerous if the tablets are crushed and injected). Oral morphine, however, may be prescribed with no more restrictions than are applied to oral methadone and is available as a solution, as ordinary tablets and as sustained-release tablets, which are considerably more expensive.

Although it is difficult to do even single-blind trials, some patients do seem to find morphine a much better maintenance drug than methadone, though some who try morphine because of dissatisfaction with methadone find that morphine is even less satisfactory. One patient, who was maintained on 115 mg of methadone daily and was holding down a demanding bureaucratic job, mentioned that in his heroin-smoking days he was a good goalkeeper in his football team, but on methadone, though functioning, he felt rather sluggish. He was transferred to oral slow-release morphine at a dosage of 240 mg twice daily and pronounced himself well-satisfied, even though it cost over three times as much as his previous methadone. We eventually prescribed a morphine mixture that was less expensive.

Interestingly, the cheapest form of morphine is laudanum—tincture of opium BP— which works out at about £4 ($6.25) per gram of morphine. Unfortunately, it tastes very unpleasant and

despite the financial incentive, many patients cannot drink it even when it is well diluted. However, crude opium in the form of opium pills might be a more acceptable and equally economical way of maintaining people on morphine. Though common in Victorian times, it is not currently available in Britain.

Non-opiate Maintenance

It has recently emerged that a few NHS drug-dependence clinics have each been quietly maintaining up to several dozen patients for many years on oral amphetamines. Some of these patients were the sort of tired young housewives for whom amphetamine was prescribed in the early 1960s and who are now tired middle-aged housewives still dependent on amphetamine. They tend to take relatively modest doses (ie, not more than 20 mg daily) and do not inject. However, some clinics have tried to address the problem of amphetamine injecting—relatively common in Britain—by making available relatively generous doses of oral amphetamine.[8]

Again, no government figures are available, but figures from the industry show a curious pattern. From 1.3 kg in 1990 and 0.7 kg in 1991, sales rose to 36.6 kg in 1992 and remain around that level. If true, they are difficult to interpret.

In my own practice, in addition to a few patients on dexamphetamine maintenance, at doses ranging from 10 mg to 125 mg daily, I sometimes suggest dexamphetamine maintenance for refractory cocaine abuse on a purely empirical basis, analogous to methadone maintenance for heroin abuse. I measure success by monitoring hair cocaine levels. If the levels do not fall considerably and stay low, patients know that they risk losing their prescription, having to pick up daily from the chemist, or other sanctions. This brings us to the issue of monitoring in general.

Monitoring of Maintenance Prescriptions

There are very few methadone clinics in Britain where methadone is swallowed daily under supervision, American-style. At

most, patients may be required to collect their prescription daily from a pharmacy and, though it is possible to ask the pharmacist to require the patient to drink it in her or his presence, not all pharmacists like to have this responsibility. Diversion is therefore in principle easy, especially with injectable drugs, since few pharmacists are prepared to allow patients to inject in the pharmacy, though one or two of the more helpful ones will do so if they have a suitable back room, at least at the start of treatment.

The concept of mandatory urine testing, as in American programmes, is entirely foreign to British practice. Most clinics do a few urine tests, though the response to a positive result varies enormously, from offering an increased dose of methadone, through inactivity, to discharging the patient. Although there are some suggestions that a combination of blood methadone levels and urine methadone levels may enable compliance to be monitored by subsequent urine testing, this is still very experimental and is also rather expensive. Quantitative urine testing has also been proposed for monitoring unprescribed drugs[9] but sounds very labour-intensive. A method of monitoring that maximised the possibility of detecting illicit drug use or diversion of methadone with minimal cost and inconvenience would clearly be useful in any methadone programme, but particularly in a British context.

Although no other clinic seems to have followed our lead in the routine use of hair testing,[10] we continue to find it a very helpful technique for keeping an eye on what our patients are doing, at relatively low cost and with minimal demands on time and dignity. There is increasing evidence that hair testing is not only the most sensitive method for detecting the use of a particular drug, especially if it is not used on a daily basis,[11] but is also semiquantitative.[12,13] That is, it gives one a reasonable chance of finding out, on a monthly basis or over 2- or 3-month periods, whether the level of use of a particular drug has gone up or down.

Furthermore, although the ingenuity of addicts in evading urine tests is notorious and there are commercially available kits containing glutaraldehyde, which will inactivate many standard urine drug screens, no one has yet come up with a substance that

destroys the drugs in hair without also destroying the hair or seriously irritating the skin from which it emerges. In two US probation or bail-diversion schemes for drug-related offenders, in which hair testing is the main monitoring technique,[14] those with very short hair styles are required, as one of their probation conditions, to keep a small area of longer hair on their scalp for sampling. Pubic hair can also be used, however; it grows more slowly than scalp hair and drug concentrations tend to be higher.

If results so far continue to be confirmed by subsequent research, hair testing may give us a good a chance of detecting diversion of methadone by patients who have actually managed to detoxify themselves but are selling their prescription in the black market. It certainly enables us to detect those patients who are selling their methadone to buy heroin. The ability to monitor levels of consumption of a number of drugs means we have more information to help us in our negotiations with our patients; negotiation—actual or implied—is an almost universal feature of maintenance programmes. A patient on methadone maintenance who is using only a tenth of his previous heroin habit may still have regular positive urines. Only hair testing enables us to see that this is actually a 90% improvement.

Although some people are reluctant to admit it, there is an element of social control in addiction treatment. This is especially true when drug-taking behaviour leads to criminal behaviour. Like it or not, we are, inevitably and to some extent, in the business of control and, as physicists say, "until you can measure, you cannot control."

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